

How is corn processed?

Detail Introduction :

Corn is an important cereal that is widely planted around the world and cultivated throughout China. When corn is mature, it needs to be processed.

So, How is corn processed? Corn processing is divided into dry processing and wet processing. Let's take a look at these two processing methods.



Dry corn processing:

- (1) The process of dry processing: Generally, it is to remove impurities, adjust moisture, peel, break germ, lift grits and embryo, and grind flour to get corn grits, corn flour, and corn embryo respectively.
- (2) dry processing process: generally divided into three kinds, corn all ground into flour of the whole corn method; product for the powder and embryo of the embryo flour method; joint product processing method. The product has corn flour, corn grits and corn embryo three kinds.

At present, the domestic corn dry processing process is broadly divided into two categories: the embryo making process, mainly for the production of food-grade corn flour, and the other is the dry deembryo process, mainly for the production of fuel alcohol.

Most of the existing dry corn processing plants producing food-grade corn flour are private enterprises with a daily processing capacity of 50 tons and a few up to 100 tons, using a process that omits the water conditioning corn germ making process. The process requires the moisture of the raw grain to be basically controlled at 14% to 15%, and the corn with a high keratin rate is naturally dried or aged so that the steeping step can be reduced.

The peeling section uses three vertical emery peeling machines or two horizontal emery peeling machines. The grits crushing and degerming machine adopts the double-rod horizontal grits crushing and degerming machine, and the germ extracting machine uses domestic products. The sieving part adopts a double-chamber flat screen, and a high square flat screen is used when the processing capacity is large. The drying part uses a domestic pneumatic mill.

From the process effect, the product quality is good, the grease content and fiber content of grits and germ are less than 1%. However, because the sieving of the front peeling and intestinal embryo recovery is difficult, it is easy to cause a large amount of corn grits in the scraps of the embryo extracting machine and other parts, leading to some waste.

From the point of view of enterprise benefit, the use of a simple embryo-making process can fully meet the requirements of private owners. For example, the investment in a processing plant processing fifty tons per day is only 500,000, and the cost can be recovered within 1 to 2 years. The current product range covers large, medium, and small grits, which are well marketed and mainly used for making corn porridge and other food.



Wet processing of corn:

(1) The process of wet processing: cleaning, soaking, grinding, separating, refining, dehydrating and drying, etc., so that the non-starchy substances such as cellulose, oil, and protein in corn kernels are separated from the starch, and the starch is obtained in the form of clean white powder.

(2) There are six processes in wet processing: six products are starch, protein, gluten powder, corn porridge, germ oil, cake meal, and residue, etc., which can also be further processed.

In addition to the principle, method, and equipment of cleaning are basically the same as those of rice processing, hydrocyclone stone remover and water tank with weir are also used to remove heavy stones and metal objects further.

Soaking methods are single tank circulation and counter-current circulation. The purpose is to soften kernels and destroy the protein network, remove most of the soluble material to facilitate the crushing and separation. Crushing and germ separation generally uses a two-pass crushing and two-pass separation process. A cam mill is used for crushing, and a germ cyclone or flotation tank is used to separate out embryos, which are then washed against the flow by a six-pass curved sieve to obtain net wet embryo. Grinding and fiber separation and washing are to grind the corn mash with an impact mill or grinding mill to form a suspension. It contains fine residue and coarse residue, and then use a vibrating flat sieve, centrifugal sieve, or curved sieve to separate the free starch, fine gluten particles, and cellulose, and at the same time add water to wash to improve the starch yield fully.

The refining of starch milk is carried out in three ways in Chinese corn starch plants: flow tank, centrifuge, and centrifuge plus cyclone set. Dewatering and drying of starch are usually done by triple foot centrifuge, automatic scraper discharge centrifuge, and vacuum suction filter to separate the free water from starch through the filter cloth.

Starch drying is mainly done by airflow (also known as flash) drying, which is a heat exchange process. A purified high humidity airflow comes to mix and send wet starch in a closed pipe, instantly drying the starch to 14% water content.



The above is an introduction to the two corn flakes processing techniques. The Corn Flake Production Line is the best equipment for producing corn snacks, which is very suitable for small and medium-sized enterprises.